

REMARKS

The Official Action mailed May 21, 2003, and the prior art relied upon therein have been carefully reviewed. The claims in the application are now claims 1-8, these claims define novel and unobvious subject matter under Sections 102 and 103 and should be allowed. Applicants accordingly respectfully request favorable reconsideration and allowance.

The PTO has not answered or rebutted applicants' reply to the restriction requirement filed April 28, 2003, but has simply stated that applicants' arguments have been considered but are not convincing for the reasons previously set forth by the PTO; and the PTO has withdrawn claims 9 and 10 from further consideration. With respect, applicants believe that their arguments for traversal deserve an answer or rebuttal.

Nevertheless, to advance prosecution, and because applicants do not deny that the groups are patentably distinct from one another, i.e. each is *prima facie* non-obvious from the other, the non-elected claims 9 and 10 have now been deleted without prejudice to the present invention and without prejudice to applicants' rights to pursue the subject matter

of such now cancelled claims 9 and 10 in a divisional application, if applicants choose to do so, without any penalty whatsoever, and applicants relying on their rights including those rights provided by Sections 121, 120 and 119.

Claims 1 and 4 have been objected to because of certain informalities. The examiner's helpful suggestions have been adopted by the cosmetic amendments presented above.

Claims 1-8 have been alternatively rejected under Section 102 as anticipated by, or under Section 103 as obvious from, Okada et al USP 5,892,026 ("Okada"). These rejections<sup>1</sup> are respectfully traversed.

Okada discloses, at column 3, lines 15-20, a trehalose syrup having a concentration of 18.5 to 25% of trehalose (also see col. 3, lines 30-31; and col. 4, line 52). Okada further discloses, at column 6, line 1 to column 7, line 5, that the trehalose syrup can be used for sweetening various foods and beverages. In Example B-14 of Okada, "Tsukudani

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<sup>1</sup> Applicants believe that these rejections are inconsistent. If Okada anticipates the claimed subject matter, then such subject matter cannot have been obvious under Section 103. On the other hand, if the claimed subject matter is obvious from Okada, it cannot also be anticipated by Okada. In other words, anticipation and obviousness are mutually exclusive.

(food boiled down in soy)" is obtained by using the trehalose syrup.

However, it should be noted that Okada uses trehalose as a sweetener and that the foods disclosed in Okada, including "Tsukudani" in Example B-14, are those sweetened by trehalose. There is no indication that any such food in Okada has become dehydrated.<sup>2</sup> Contrary to Okada, the present invention uses trehalose as a dehydrating agent in an aqueous system to dehydrate food material in aqueous solution, and obtains a dehydrated food having the taste and mouth-feel of a fried food.

The Okada citation is well known to applicants (two of the present applicants are also co-inventors of the invention disclosed in the Okada citation). Consistent with what is indicated above, Example B-14 discloses a cooking process in which the product was boiled with trehalose of Example A-4 (only 21% trehalose) together with other ingredients. To provide a dehydrated food as called for in applicants' claims, it is necessary to use a trehalose

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<sup>2</sup> The rejection does not allege inherency. However, if inherency is relied upon by the PTO, applicants note that inherency must be certain or inevitable, and there is no certainty that the Tsukudani of Example B-14 of Okada meets applicants' claims. Indeed, it cannot, as Example B-14 used the trehalose solution of Example A-4 which contained only 21% trehalose.

solution which is much more concentrated than anything disclosed or taught by Okada.

To obtain a dehydrated food in the prior art, it has been conventional to heat the food in a lipid, i.e. an oil or fat, at the boiling point of the lipid whereby the food becomes dehydrated in the lipid by "frying", an extremely well-known cooking method. However, frying has substantial disadvantages which are also well-known, noting for example applicants' "Description of the Prior Art" at pages 1 and 2 of applicants' specification. Among the significant disadvantages of frying is that lipids contained in the fried foods deteriorate and/or oxidize, and change in quality, resulting in a degraded food and a shortened shelf life. Moreover, there are significant health disadvantages in the consumption of fried foods, such consumption contributing in many cases to obesity and even heart disease.

The claimed product is achieved by using a trehalose solution instead of a lipid bath to dehydrate the food material. The high temperatures normally reached in frying are unnecessary in obtaining the claimed product, i.e. the dehydration achieved to produce applicants' dehydrated food product is obtained at relatively low temperatures compared to

frying temperatures. The advantages of applicants' product obtained using a trehalose solution are described at page 37, second paragraph.

It should be noted that dehydrating food materials not in lipid system but in aqueous system, i.e. in aqueous trehalose solution, is a totally new finding discovered by the applicants. Okada does not show or teach dehydrating food materials in an aqueous system. It is clear that Okada does not anticipate applicants' claims, and the rejection based on §102 should surely be withdrawn.

As the rejection relies on Example B-14 of Okada, applicants wish to explain "Tsukudani (food boiled down in soy)". "Tsukudani", which is a typical Japanese processed food, is prepared by first adding various seasonings, including sweeteners, onto food materials, and then boiling them down and vaporizing the water to obtain almost solid processed food, i.e. "Tsukudani". The color of food materials is usually lost or at least greatly changed through the cooking processes. Sweetener, such as trehalose if trehalose is used as a sweetener, used to prepare "Tsukudani" is naturally taken into food materials to form "Tsukudani". It

is quite difficult (if indeed possible) to separate the sweetener, such as trehalose, from the "Tsukudani".

Contrary thereto, processed food materials according to the claimed invention is taken out (removed) from an aqueous trehalose solution after the cooking process is terminated. The aqueous trehalose solution can then be re-used to dehydrate other food material.

Claim 1 has been amended above in two ways to better emphasize the invention. First, it is made more explicit that the claimed food product is "dehydrated."<sup>3</sup> Second, claim 1 now makes clear by the recitation added at the end thereof that the claimed dehydrated food product has not absorbed large quantities of the trehalose solution.

Okada does not disclose a dehydrated food product. The rejection based on section 102 should be withdrawn.

As regards section 103, the concepts of providing a dehydrated product is entirely non-obvious from Okada which contains not the remotest inference, let alone any positive teaching, of providing applicants' claimed product. Stated another way, the results of the process by which applicants'

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<sup>3</sup> The terms "dehydrate" and "dehydrated" have the meaning set forth in applicants' specification which is consistent with conventional meaning, i.e. removal of water, in this case an amount of water to provide the mouth-feel noted.

product is achieved are highly surprising (i.e. applicants' claimed product is non-obvious). No one would have expected that one could produce a non-fried cooked food product having a texture or mouth-feel similar to that of fried food by cooking the food in an aqueous trehalose solution containing at least 50 w/w% trehalose, without using oils, fats or the like, the resultant food having become dehydrated in the highly concentrated trehalose solution.

Okada provides no motivation or teaching which may lead a skilled artisan to the present invention.

Stated another way, the prior art does not lead the person of ordinary skill in the art to or even toward the claimed subject matter. As stated in *Ex parte Levengood*, 28 USPQ2d 1300, 1301 (BPAI 1993):

In order to establish a *prima facie* case of obviousness, it is necessary for the examiner to present **evidence** [footnote with case citations omitted], ... that one having ordinary skill in the art **would have been led** ... to arrive at the claimed invention. (citations omitted; italics in original; emphasis added)

Applicants ask with respect where in the prior art there is any teaching which leads the person of ordinary skill in the

art to use a concentrated trehalose solution and thus obtain the claimed product. There is none.

Please also consider *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) which also emphasizes the importance of the presence of "actual evidence" of what would have been obvious in the prior art, and the fact that "the showing must be clear and particular". In the present case, there is no "actual evidence" of the use of highly concentrated trehalose solutions, let alone the making of an entirely different type of product (a non-fried, cooked food product having a texture and mouth feel approaching that of fried foods) by the use of such a highly concentrated trehalose solution.

As regards claim 7, applicants respectfully note that a process may properly be used to characterize a product. A process recitation which serve to characterize the product cannot be properly brushed aside, noting for example *In re Luck, et al*, 177 USPQ 523, 525 (CCPA 1973).

The rejection based on section 103 should be withdrawn and such is respectfully requested.



Claims 1-5 and 7 have been rejected alternatively as anticipated under section 102, by or obvious under section 103 from Roser USP 5,026,566 ("Roser"). These rejections<sup>4</sup> are respectfully traversed. While the rejection states that Roser discloses, at column 2, lines 15-28, a proteinaceous foodstuff which has been dehydrated and heated in a concentrated aqueous trehalose solution, applicants do not agree. Roser states at column 2, lines 21-25 as follows:

We have found that the addition of trehalose to proteinaceous foodstuffs enables them to be not only dried, but also heated at quite high temperatures, without significant denaturation.

Trehalose is used in Roser to prevent proteinaceous foodstuffs from being denatured during drying or heating, in effect as a preservative or the like. It should be noted Roser never states that trehalose is used to dehydrate (or to dry) foodstuffs at all. In fact, Examples 1-6 of Roser does not disclose dehydration process of foodstuffs in a concentrated aqueous trehalose solution.

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<sup>4</sup> Again, as indicated in footnote 1, applicants believe that these rejections are inconsistent with one another.

Roser basically relates to a spray-drying method to obtain a powdered product for later reconstituting. In Roser, trehalose is added to fat containing proteinaceous foodstuffs to prevent the foodstuffs from becoming denatured during the application of heat during the spray drying process. The foodstuffs dealt with in Roser are liquids or other runny materials (purees), and the amount of trehalose is relatively small. In Example 1, a liquid is used, whole milk; in Example 2, a runny material (hen's egg) is used; in Example 3, instant powdered coffee is prepared; in Example 4, tomato puree is treated to make spray-dried tomato powder; and in Example 6, orange juice concentrate is spray-dried. Contrary to the objectives and process of Roser, trehalose is used in the present invention to provide the claimed cooked product simulating a fried food, without using lipids, not a dried powder.

Whereas Roser stops the denaturing of foodstuffs during the heating process, the instant invention addresses the disadvantages of foods fried in lipids, detailed in the specification on pages 1-2, which are:

(1) lipids contained in fried foods are very susceptible to denaturation and change in quality,

(2) dried foods may cause in living bodies a nutritional unbalance and an excessive calorie intake when taken excessively,

(3) dried foods may produce peroxidized lipids, and

(4) too much dried foods may induce life-style related diseases or geriatric diseases.

Contrary to Roser, the present invention is not concerned with the manufacture of spray-dried products. The present invention is directed to a cooked food which simulates a fried food with respect to mouth-feel and the claimed product avoids the above-noted disadvantages of conventional frying. Instead of a fried food product which has been heated and dried in lipids, thus resulting in a fatty product, the present invention is a food product cooked in a concentrated aqueous trehalose solution.

The rejection does not expressly refer to inherency, but possibly this is what is being relied upon. If so, applicants again respectfully note that inherency must be inevitable or certain, and Roser does not meet the requirement, it being noted that Roser mentions the use of a

trehalose solution comprising only up to 15% of trehalose, which is a far lesser concentration than what would be necessary to inherently produce the claimed subject matter.

Roser does not anticipate applicants' claims, and the rejection based on section 102 should be withdrawn. Such is respectfully requested.

As regards the rejection based on section 103, Roser contains (like Okada) not the remotest inference or suggestion of the present invention or how applicants' claimed product could possibly be achieved. Roser never suggests using a concentrated aqueous trehalose solution to dehydrate foodstuffs at all. As no teaching exists on how to modify Roser so as to achieve the claimed product, it would not have been obvious to a person of ordinary skill in the art to so modify Roser.

The rejection based on section 103 should be withdrawn, and such is respectfully requested.

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Applicants respectfully request a favorable  
reconsideration and allowance.

Respectfully submitted,

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By

A handwritten signature in black ink, appearing to read 'S. Neimark', written over a horizontal line.

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